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ABSTRACT

This paper, based on a Society for College and University Planning conference, outlines some of the alternatives and procedures for effective utilization, modernization, and renovation of existing space at institutions of higher education. Various options to alleviate the need for new campus construction are presented with examples of implementation. (MJM)

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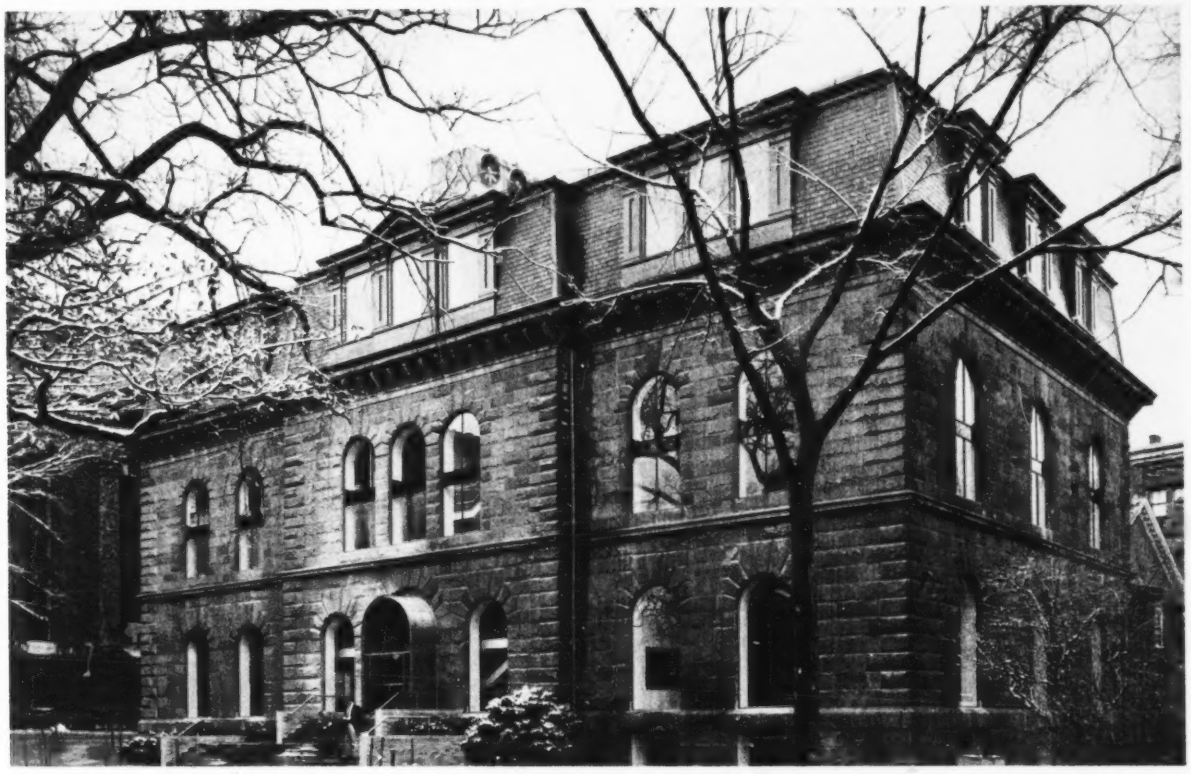
Recycled Space and Found Space



Harvard's "recycled" Boylston Hall. (The Architects Collaborative, architects.) Photo by Louis Reens

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Among other effects, the fiscal crisis in higher education has put the brakes on new campus construction and placed a new emphasis on the better use of existing space, the "recycling" of existing structures for new and/or better uses, and "found space," the lease or purchase of non-campus commercial structures and their conversion for academic use. The following article, based on a SCUP Spring Conference on "Modernization and Renovation for Higher Education Facilities" held at Fordyce House, St. Louis, April 26-27, in cooperation with Educational Facilities Laboratories, outlines some of the alternatives and procedures for effective utilization, modernization, and renovation.

Colleges and universities constantly modernize their old buildings. On a campus with any longevity, it is far from unusual to find buildings that have been "recycled"—renovated to accommodate new uses—three, four, five, or more times. A classic example is Harvard's Boylston Hall, a handsome granite structure built in 1858 as a

chemistry laboratory, anatomical museum, and library. Over the years, the building was added to and changed in function to house a history library, an Oriental Institute, and psychology laboratories. Most recently, in 1959, Boylston was completely gutted, five floors and a mezzanine installed in what had been a four-story structure, and converted into an up-to-date language study center.

By the same token, there is nothing new about "found space." Colleges and universities, particularly urban institutions like New York University, almost from the beginning have turned to the conversion of existing office buildings, warehouses, and the like as a means of creating academic space.

Why then, the new interest in modernization and renovation? Why a conference on the subject, and a well-attended one, at that? A fairly obvious reason is to be found in the new recession in higher education and the hard fact that institutions, both public and private, find dollars for new construction hard to come by if, indeed, any at all are available. In other cases, particularly in some of the fast-growing public institutions, administrators find themselves overbuilt, with more space, particularly in dormitories, than is needed. To these institutions, the message is clear: "make do with what you've got and make better use of what you've got."

Interest in "found space" also runs high among brand new institutions, like the Community College of Denver, that are required to begin operation before permanent facilities can be planned and erected.

THE NEW SOPHISTICATION

At the same time, there is a new sophistication in the institutional use of the modernization and renovation options. The new look is to be found not only in the nuts and bolts—the architecture and engineering involved—but in the process by which administrators and planners utilize and evaluate a campus building and eventually decide whether to modernize, renovate, or

Interior view of Boylston Hall indicates the quality and amenity possible in renovation of existing campus buildings. (The Architects Collaborative, architects.)

Photo by Louis Reens

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replace it with new construction. It was to these developments that the St. Louis conference was devoted.

The key to the new sophistication may be found in the fact that, as in other institutional planning areas, there is a new emphasis on the use of modern management methods in facilities utilization and management. An example is to be found at the Massachusetts Institute of Technology, which has introduced centralized control of facilities use and a computer-aided space inventory system to insure maximum use of its existing plant.

MIT, according to O. Robet Simha, planning officer, has an advantage in that much of its 4 million square feet of academic space (the total plant amounts to 7 million square feet) is made up of "truly generalized space" and is readily adaptable to changes in use. In fact, Simha noted that most of the spaces in MIT's main structure, built in 1911 and designed around a module of 300 square feet, have been "recycled" numerous times over the more than 50 years of their existence.

THE "OWNERSHIP" OF SPACE

Space at MIT is controlled—"owned," if you will—by a committee on space planning and not by academic departments or other institutional units. The committee, chaired by the provost, meets regularly and "very visibly," according to Simha, and, along with the computerized space inventory, offers "a reasonably effective way to make sure space actually is used." In fact, after the computerized inventory was introduced, Simha discovered underutilization under the old, manual space-control system, that was costing MIT $400,000 a year in lost overhead.

But Simha urged space planners and managers to look beyond scheduled academic spaces in their search for efficient use of plant. Noting that only 4 million of MIT's 7 million square feet of building space was assigned to active academic use, he urged more creativity in approaching the utilization problem.

"We must look at our buildings as a resource," he commented, "and not simply as an enclosure."

He urged, for example, that institutions take a close look at their "grand empties," such as corridors and lobbies. Corridors, he noted, are the most underutilized spaces in campus buildings but "they can be put to work." MIT, he said, has renovated its corridors to serve as information centers and to permit departments to communicate with passers-by through the use of exhibits, rear-projected, continuous-play films, and the like. Similarly, the main lobby now boasts a lounge area furnished with lightweight furniture and planters, to promote contact between students, faculty and visitors.

In a similar vein, Simha urged that institutions stop regarding their buildings as single-purpose, educational structures and consider sharing them with other uses. He cited MIT's student center, in which an entire floor devoted to shops and services is commercially controlled. Harvard's Holyoke Center, he pointed out, houses commercial office space, university offices, and the university infirmary. Two new residential buildings at Yale will include commercial facilities to replace those displaced by the new construction and to offset tax losses to the City of New Haven. And, when MIT recently purchased a 400,000-square-foot candy factory, it found it needed half the space for offices; the rest remains in commercial use and the resulting income is helping to write off MIT's initial investment.

TO SAVE OR NOT TO SAVE

Institutions have a series of options in dealing with aging buildings: use them as they are, modernize (and possibly expand) them for the same uses, renovate them for new uses, or demolish them and build anew. All too often, the choice is made on an *ad hoc* basis and only when an imminent crisis forces a decision. Conversely, all too often there is no organized, rational machinery for periodic evaluation of buildings to determine whether they are sound, safe, functional, and suited to the uses to which they currently are put.

Not so in Wisconsin, where the state's Bureau of Facilities Management has developed a process for evaluating public buildings, including those of the state's institutions of higher education, that permits rational answers to the question of "save or raze."

The process, according to Robin Riley, architect and consultant, is based on the development of system of communication between the technical people involved—architects and engineers—and the laymen—educators and legislators. Development began with the identification of the factors that contribute to building obsolescence: the building's physical characterisitcs, building maintenance, codes and safety, building location, and academic utilization.

Physical characteristics, Riley noted, include, structural integrity, exterior appearance, interior conditions, building efficiency, adaptability to expansion, and the condition of mechanical, electrical, utility, and special systems. Maintenance factors include architectural, mechanical, and electrical upkeep. And location factors include the building's relationship to other buildings and to the master plan as well as its historical significance.

The list of factors in hand, a team—usually including an architect, a mechanical engineer, and an electrical engineer—is organized to conduct the evaluation. Called a "review panel," the team meets with physical plant administrators on the campus in question, reviews the master plan, then "inspects every nook and cranny" of the building under evaluation.

The result, says Riley, is a "mass of material" meaningless to a lay reader of the team's narrative report. To meet that problem, the Bureau has developed a numerical system under which each factor in the list is assigned a weighted number of points, with a point total of 100 for any one building. In addition, "emergency points" may be added when extremely dangerous conditions or unusual deterioration of building systems are discovered. The building then is rated against the

point system and the ratings used to help determine whether renovation or demolition is called for and, if not, when that might occur.

THE EDUCATIONAL FACTOR

At this point, the team's work is half done. The second phase of each evaluation deals with the building's educational adequacy—are buildings spaces adequate in size for the programs they house, are they efficient, flexible, properly located? Is the environment—heating, air conditioning, lighting—suitable? Are the proper equipment, both fixed and moveable, accessories, and support services available? Again, a system of weighted points is developed, in cooperation with the campus chancellor and deans, and employed in producing a numerical evaluation of the building.

The numerical system makes it possible to develop projections to indicate how long a building and its shorter-lived mechanical and electrical systems will—or should—last and to establish the parameters within which modernization or renovation represent a wise investment in comparison to demolition and new construction. It does not produce cost estimates for remodeling or renovation but offers a sound base for architectural and engineering feasibility studies and cost estimates.

The Wisconsin approach is a repetitive one. Each of the more than 5,000 educational buildings in the Bureau's jurisdiction is to be re-evaluated every six years, although Riley suggests that the interval could be as long as ten years.

BUILDINGS FOR $1 APIECE

When the central administration of the University of Texas system decided several years ago to move off campus to "neutral" location, an alert Board of Regents discovered that the federal government had decided to abandon a post office and court house on adjacent sites in downtown Austin. Under federal law, such "discarded" buildings must be offered to other federal departments and agencies and, if there are no takers, offered to state and local governments for sale at a nominal price of $1.

The University jumped at the opportunity, purchased the buildings, and retained the architectural firm of Brooks, Barr, Graebor to convert the structures into a new central headquarters. A third building on the site, a temporary structure, was demolished to make way for a 100-car underground garage covered by an open plaza and fountain. The post office and court house exteriors were refurbished and retain their original character. The interiors were completely remodeled to accommodate the university's administrative offices. The result is an extremely handsome new administrative complex, acquired at a total cost of $2.7 million, or $27 per square foot, less than the cost of equivalent new construction.

When the Community College of Denver was organized in 1970, it was under a legislative mandate to open a downtown campus for 1,000 students that fall and had a limited $100,000 budget with which to rent enough space to house them. Today, with its permanent facilities in the projected Auraria Higher Education Center still some years away, the college houses 2,000 students in three converted buildings—two former auto showroom-garage structures and a former warehouse-garage—all within a three-block radius in downtown Denver.

The buildings, leased at $3 per square foot per year, were remodeled at the landlords' expense to provide classroom, library, and office space. The somewhat-makeshift and inexpensive renovation effort produced a totally open environment for both classrooms and offices. Light, seven-foot partitions divide classroom areas and a system of ceiling baffles is used to alleviate the problem of noise transmission.

Denver's instant, storefront campus has not been without its problems, according to G. Owen Smith, the college's administrative assistant. There have been complaints about the open offices and about noise and there have been security problems. But, as Smith pointed out at the conference, the college would have been at "ground zero" today if it had had to wait for permanent facilities. In addition, the temporary campus proved to be an "excellent training ground" for the faculty in an open classroom experience and a prototype for the college's permanent buildings, which will retain much of the open concept. The instant campus, Smith concluded, "will win no design awards. But it is a very expedient and usable solution."

THE IMPORTANCE OF OPTIONS

The significance of found space to higher education may be indicated by the fact that the City University of New York is reputed to be New York City's largest single tenant, with an annual rental budget of $15 million. And it may be instructive to examine the experience of St. Louis University with a $36 million expansion program started in 1959. While $20 million of the total went to new construction, the university bought $6 million worth of existing commercial structures and poured $10 million into the renovation of existing campus facilities. And a major renovation of the university's medical center currently is under way. In fact, the university attaches so much importance to the found-space option, it has established a formal procedure to determine whether to build new facilities or purchase existing structures when additional space is required. Under the procedure, the ultimate decision is made by a team made up of administrators, architects, engineers, and other appropriate experts.

Despite higher education's fiscal crisis, new campus construction is not likely to come to a complete halt. But it seems clear that the other options—modernization, renovation, and found space—are going to be more and more attractive.

James J. Morisseau